UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/693,351	10/20/2000	Wei Ding	6601-54075	7947

7590 03/13/2003

Coudert Brothers
600 Beach Street
San Francisco, CA 94109

EXAMINER
NATNAEL, PAULOS M

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 03/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/693,351	DING ET AL.	
	Examiner	Art Unit	
	Paulos M. Natnael	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-13** are rejected under 35 U.S.C. 102(e) as being anticipated by **Adams** et al., U.S. Pat. No. 6,380,978.

Considering claim **1**, Adams et al disclose the following claimed subject matter, note;

a) the claimed navigation unit operative to isolate an input video signal is met by Video Data Buffer 42 (fig.3).

b) the claimed a decoder operative to separate said input video signal into a plurality of frames, each frame containing a series of fields is met by the MPEG2 decoder 28, fig.3; (col. 3, lines 4-12; see also fig.5 and col. 9, lines 12+)

c) a video display module comprising a detection unit operative to determine the type of processing to be performed on said input video signal *based on information contained within each of said plurality of frames* is met by Image Enhancement Engine 30, fig.3

Considering claim **2,** wherein said video display module further includes a processing unit operative to provide a filtered digital video frame signal based on said fields is met by video output processor 60, Fig.3.

Considering claim **3**, the system of Claim 1, wherein said detection unit is operative to determine the type of processing to be performed on a video frame signal based on particular field data contained within said video frame signal is met by deinterlacers 70 and 80 (fig.4) which include detection.

Considering claim **4, t**he system of Claim 1, wherein said detection unit is operative to determine the type of processing to be performed on a video frame signal based on the field data of a predetermined number of prior video frames and said video frame signal is met by deinterlacers 70 and 80, (fig.4). (see also Fig.5)

Considering claim **5, t**he system of Claim 4, wherein said predetermined number of prior video frames is three is met by Fig. 5;

Considering claim **6,** the system of Claim 2, wherein said processing unit further comprises a first processing module operative to provide a digital video frame that is a concatenation of fields of an input data frame, and a second processing module operative to provide a digital video frame containing field segments having values based

on adjacent field segments is met by the output of FIFOs 136, 138 140 to field assembly 150, which in turn outputs a frame 152. (see also fig.5)

Considering claim **7,** the system of Claim 3, wherein said particular field data is stored in a table, said table containing the type of processing to be performed on said video frame signal is met by Incoming Field buffer 134a, Fig.6;

Considering claim **8,** a digital video display system, comprising:
a) a navigation module operative to isolate an input video signal present in a digital medium is met by video data buffer 42, fig.3;

b) a decoder operative to separate said input video signal into a plurality of video frames is met by MPEG2 decoder 28, fig.3;

c) a detection module operative to detect the type of processing to be performed on said video frame, said detection module including a table which provides the type of processing to be performed on said video frame in response to the current video frame position is met by Deinterlacers 70 and 80, Fig.4.

d) a processing module operative to provide a filtered video frame in response to information contained in said table, wherein said filtered video frame is capable of being displayed on a progressive display device is met by video output processor 60, fig.4.

Considering claim **9**, wherein said processing unit further comprises a first processing module operative to provide a digital video frame that is a concatenation of fields of an input data frame, and a second processing module operative to provide a digital video frame containing field segments having values based on adjacent field segments is met by the output of FIFOs 136, 138 140 to field assembly 150, which in turn outputs a frame 152. (see also fig.5)

Considering claim **10,** The system of Claim 8, wherein said detection module is operative to determine the type of processing to be performed on said video frame based on field data of a predetermined number of prior video frames and said video frame is met by deinterlacers 70 and 80, fig.4. (see also fig.5)

Considering claim **11**, wherein the predetermined number of prior video frames is three, is met by Fig. 5;

Considering claim **12,** Claim **12** is a method claim of claim **8** and, thus, Claim **12** is rejected for the same reason as claim **8**.

Considering claim **13**, the processing method of Claim 12, wherein said predetermined parameters are frame dependent.

Regarding claim 13, see rejection of claim 8(c) and (d).

3. Claims **14** and **15 are** rejected under 35 U.S.C. 102(e) as being anticipated by **Callahan** U.S. Pat. No. 6,380,985.

Considering claim **14**, Callahan discloses all claimed subject matter:

a) separating a video image frame into its component fields is met by step 100 , fig. 3;

b) determining which of said component fields is the first component field is met by step 102, fig.3;

c) discarding the second component field of said video image frame is met by steps 102/104, fig.3;

d) generating a combined video image frame signal based only on said first component field is met by step 106, fig.3;

Considering claim **15**, Callahan discloses all claimed subject matter:

a) separating said first component into alternating pixel lines, generating a pixel line having a value comprising the average of said alternating pixel lines is met by the disclosure that "The resize and filter equation [1] averages pairs of sequential lines....." (see col. 5, lines 8-10)

b) providing said generated pixel line between said alternating pixel lines is met by the disclosure that "averaging two sequential lines has the effect of "blurring" adjacent lines to compensate for missing interlaced lines of the dropped field." (col. 5, lines 11-13).

4. Claims **14** and **15 are** rejected under 35 U.S.C. 102(e) as being anticipated by Tinker et al., U.S. Pat. No. 6,456,329.

Considering claim **14**, Tinker et al. discloses all claimed subject matter:
a) separating a video image frame into its component fields, determining which of said component fields is the first component field is met by Fig. 1, which discloses two successive interlaced image fields.

b) discarding the second component field of said video image frame is met by the disclosure that "In the "bob" technique, the blank lines in each field are dropped." (col. 2, lines 4-6)
c) generating a combined video image frame signal based only on said first component field is met by the disclosure that the blank lines are "restored by a times-two zoom" process to fill in the missing lines in at attempt to regain the vertical resolution and aspect ratio lost due to the dropping of one half the lines." (col. 2, lines 6-9)

Considering claim **15**, the claimed separating said first component into alternating pixel lines, generating a pixel line having a value comprising the average of said alternating pixel lines, and providing said generated pixel line between said alternating pixel lines is met by the disclosure that "This requires a computationally intensive process in which

each pixel in the "missing" line is calculated from the pixel values of the two adjacent thereto." (col. 2, lines 9-12);

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Voltz et al., U.S. Pat. No. 6,166,772 discloses a method and apparatus for display of interlaced images on non-interlaced display.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 6:30am -3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Paulos M. Natnael

February 26, 2003

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600